

## Integrated L-Band T/R Module, Phase II

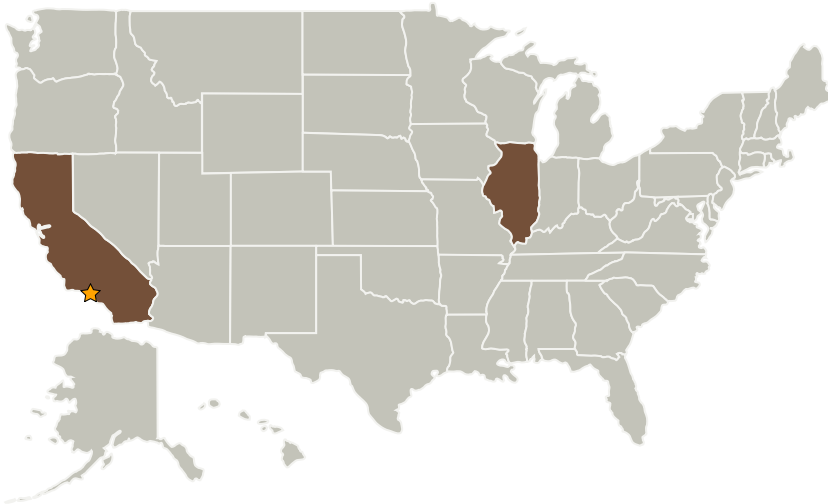
Completed Technology Project (2007 - 2009)



## Project Introduction

The goal of this Phase II project is to deliver an integrated L-band transmit/receive (T/R) module which will be fabricated from a GaAs-based combined HBT/PHEMT epistructure. The T/R module will consist of a power amplifier, a low noise amplifier, and two switches. The performance goal for the low noise amplifier is 30 dB gain with a less than 1.0 dB noise figure. The performance goal for the power amplifier is 30 dB gain, 34 dBm (2.5 W) output power, and efficiency greater than 60%. The performance goal for the switches is that they not materially affect the operation of the amplifiers. All components will be fully integrated on a single substrate. Post Phase II work includes the integration of a phase shifter, amplitude modulator, and control and interface circuitry on the same chip. We estimate the technology readiness level at the end of the Phase II program to be 6 or 7.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory (JPL)	Lead Organization	NASA Center	Pasadena, California
MicroLink Devices, Inc.	Supporting Organization	Industry Minority-Owned Business	Niles, Illinois



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Jet Propulsion Laboratory (JPL)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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### Primary U.S. Work Locations

California

Illinois

### Project Transitions



**November 2007:** Project Start



**November 2009:** Closed out

### Project Management

#### Program Director:

Jason L Kessler

#### Program Manager:

Carlos Torrez

### Technology Areas

#### Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - └ TX05.2 Radio Frequency
    - └ TX05.2.7 Innovative RF Technologies